

**APPENDIX A**

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## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-1Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/10/03Weather: Warm and Sunny

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{120}{\text{TD (feet)}} - \frac{40.42}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{155.85}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
1006	40.42	0.0	7.30	65.7	2.1	4.27	18.02	215	
1016		30.0	7.40	63.5	0.00	11.16	17.48	224	
1026		60.0	7.40	63.7	0.00	5.12	17.30	217	
1036		90.0	7.44	63.3	0.00	4.42	17.31	226	
1046		120.0	7.50	62.7	0.00	10.62	17.29	237	
1056		150.0	7.54	62.5	0.00	10.10	17.45	238	
1058	40.42	156.0	7.53	62.5	0.00	10.21	17.70	235	

Total Purge Volume: 156 (Gallons)Total Discharge: 3.00 (Casing Volumes)Approx. Purge Rate: 3.0 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Purge Start: 1006; clear and odorless
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank trailer

Purge water disposal: \_\_\_\_\_ combination \_\_\_\_\_

**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-1</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>1100</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-5Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/6/03Weather: Cool and Sunny

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{140}{\text{TD (feet)}} - \frac{75.38}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{126.55}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0752	75.38	0.0	7.20	37.2	36	9.19	15.28	226	H2O was pale yellow and odorless
0802		22.5	7.08	36.3	0.35	9.02	16.34	218	
0812		45.0	7.07	36.1	0.70	10.42	16.36	223	
0822		67.5	7.12	35.6	0.60	9.86	17.31	225	
0832		90.0	7.19	35.4	0.35	10.37	18.56	225	
0842		112.5	7.19	36.1	4.8	10.06	17.93	228	
0852	75.38	135.0	7.25	36.3	0.45	9.90	18.93	240	

Total Purge Volume: 135 (Gallons)Total Discharge: 3.20 (Casing Volumes)Approx. Purge Rate: 2.25 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Purge time start: 0752; clear and odorless
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank trailer

Purge water disposal: \_\_\_\_\_ combination \_\_\_\_\_

**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

**Original** MS/MSD-4 **Blank** Other ( Trip / Source / )
Sample ID: MW-5 Sample ID: MW-5 Type: \_\_\_\_\_ Type: \_\_\_\_\_Sample Time: 0857 Sample Time: 0857 Sample ID: \_\_\_\_\_ Sample ID: \_\_\_\_\_No. of Containers: 5 No. of Containers: 5 Sample Time: \_\_\_\_\_ Sample Time: \_\_\_\_\_

No. of Containers: \_\_\_\_\_ No. of Containers: \_\_\_\_\_

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-6Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/7/03Weather: Sunny and Cool

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{245}{\text{TD (feet)}} - \frac{180.95}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{125.44}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (°C)	ORP (mV)	Comments
0816	180.95	0	6.32	0.103	23	8.09	19.91	347	H2O was cloudy and odorless
0831		30	6.51	0.999	11	8.62	20.62	329	
0846		60	6.58	0.90	2.9	10.27	20.00	337	
0901		90	6.78	99.9	0.95	9.22	20.99	221	
0916		120	6.79	0.1	0.20	8.55	21.14	220	
0924	180.95	135	6.73	0.999	0.15	9.84	22.01	333	

Total Purge Volume: 136 (Gallons)Total Discharge: 3.25 (Casing Volumes)Approx. Purge Rate: 2.0 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Pump start: 0812; Purge Start: 0816; clear and odorless**RECHARGE BEHAVIOR:** ☒ Fast recharging  
Slow recharging (80% recharge did not occur after two hours)**WATER DISPOSAL**Purge water storage: Polytank Trailer

Purge water disposal: \_\_\_\_\_ combination \_\_\_\_\_

**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>MS/MSD</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-6</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0926</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-7Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/10/03Weather: Cool and Sunny

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## PURGE VOLUME CALCULATION (casing volume):

$$\left( \frac{275}{\text{TD (feet)}} - \frac{215.10}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{117.31}{\text{Calculated Purge Volume}} \text{ Gallons}$$

## PURGE METHOD

## PUMP INTAKE SETTING

Bailer – Type: \_\_\_\_\_ **X** Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

## FIELD PARAMETER MEASUREMENT

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0818	215.10	0.0	6.64	49.9	0.00	8.15	18.20	240	
0833		22.5	6.74	51.7	0.00	8.04	19.72	236	
0848		45.0	6.90	0.2	0.00	7.55	19.10	257	
0903		67.5	6.98	53.5	0.00	8.03	19.43	239	
0918		90.0	7.07	53.8	0.00	9.34	21.26	241	
0933		112.5	7.13	54.6	0.00	9.75	22.74	246	
0938	215.10	120.0	7.28	55.4	0.00	11.12	22.19	244	

Total Purge Volume: 120 (Gallons)Total Discharge: 3.07 (Casing Volumes)Approx. Purge Rate: 1.5 (GPM)

## OBSERVATIONS DURING PUMPING

NOTES: (well condition, color, clarity, odor): Pump Start: 0814; Purge Start: 0818; clear and odorlessRECHARGE BEHAVIOR: **X** Fast recharging  
Slow recharging (80% recharge did not occur after two hours)

## WATER DISPOSAL

Purge water storage: Polytank TrailerPurge water disposal: Combination

## WELL SAMPLING

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>MS / MSD</u>	<u>Additional Sampling</u>	<u>Other</u>
Sample ID: <u>MW-7</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0940</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

ORIGINAL FIELD RECORD

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-8Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/6/03Weather: Cool and Sunny

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{205}{\text{TD (feet)}} - \frac{141.58}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{124.20}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0923	141.58	0	7.19	42.8	3.3	11.48	18.03	227	
0938		30	7.21	41.9	1.1	9.81	17.64	223	
0953		60	7.30	41.8	1.2	10.98	18.01	217	
1008		90	7.39	41.9	0.60	9.74	18.02	229	
1023		120	7.40	41.2	0.60	10.77	18.06	230	
1031	141.58	130	7.37	43.0	0.00	9.37	18.46	226	

Total Purge Volume: 130 (Gallons)Total Discharge: 3.14 (Casing Volumes)Approx. Purge Rate: 2.0 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Purge Start: 0918; clear and odorless;**RECHARGE BEHAVIOR:** ☒ Fast recharging  
Slow recharging (80% recharge did not occur after two hours)**WATER DISPOSAL**Purge water storage: Polytank TrailerPurge water disposal: Combination**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-8</u>	Sample ID: <u>Dupe-7-4-Q03</u>	Type: _____	Type: _____
Sample Time: <u>1031</u>	Sample Time: <u>1037</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: <u>5</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-9Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/5/03Weather: Warm and Sunny

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{68}{\text{TD (feet)}} - \frac{32.45}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{69.62}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0925	32.45	0	6.95	69.0	25	4.00	19.59	241	H2O was black and had medium odor
0930		15	6.68	64.5	23	3.28	19.31	240	
0935		30	6.76	60.8	29	9.85	18.74	237	
0940		45	6.84	60.1	27	9.75	18.70	225	
0945		60	6.90	60.4	14	4.90	18.47	217	
0950	32.45	75	6.95	60.1	5.4	4.31	19.26	215	

Total Purge Volume: 75 (Gallons)Total Discharge: 3.23 (Casing Volumes)Approx. Purge Rate: 3 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Purge Start: 0923; clear and odorless;
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: PolytankPurge water disposal: 100**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-9</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0952</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-10Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/6/03Weather: Cold and clear

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{155}{\text{TD (feet)}} - \frac{89.38}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{128.51}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0644	89.38	25	5.32	0.118	19	9.04	16.08	337	
0654		50	6.44	0.999	2.4	8.33	17.70	211	
0704		75	6.62	0.999	0.35	8.66	18.35	323	
0714		100	6.74	0.999	0.05	8.31	18.17	220	
0724		125	6.85	0.1	0.05	9.58	17.40	216	
0728	89.38	130	6.84	0.1	0.05	8.16	18.19	217	

Total Purge Volume: 130 (Gallons)Total Discharge: 3.03 (Casing Volumes)Approx. Purge Rate: 2.5 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Purge Start: 0639; clear and odorless;
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank TrailerPurge water disposal: Combination**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-10</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0728</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-13Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/7/03Weather: Cool and Clear

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{235}{\text{TD (feet)}} - \frac{183.72}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{100.43}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0714	183.72	0	5.79	64.1	12	8.65	16.75	225	
0722		20	5.95	57.2	1.8	7.65	18.83	228	
0730		40	6.04	56.8	0.45	7.58	19.29	229	
0738		60	6.11	56.8	0.05	7.81	19.41	227	
0746		80	6.19	57.1	0.00	7.98	18.56	219	
0754	183.72	100	6.38	57.5	0.00	8.45	18.03	216	

Total Purge Volume: 100 (Gallons)Total Discharge: 2.98 (Casing Volumes)Approx. Purge Rate: 2.5 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Pump Start: 0712; Purge Start: 0714; clear and odorless;
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank TrailerPurge water disposal: Combination**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>MS/MSD- 5</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-13</u>	Sample ID: <u>MW-13</u>	Type: _____	Type: _____
Sample Time: <u>0757</u>	Sample Time: <u>0757</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: <u>5</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-15Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/7/03Weather: Sunny and Luke Warm

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**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{74}{\text{TD (feet)}} - \frac{45.24}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{56.32}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ ☒ Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0941	45.24	0.0	7.02	59.8	5.1	11.06	17.51	218	
0946		12.5	7.06	57.2	1.6	11.17	16.88	212	
0951		25.0	7.08	56.6	3.5	10.94	17.26	206	
0956		37.5	7.14	57.3	7.1	6.99	16.67	202	
1001		50.0	7.11	56.6	2.7	10.01	17.25	205	
1006	45.24	62.5	7.13	56.5	1.2	9.21	18.86	213	

Total Purge Volume: 62.5 (Gallons)Total Discharge: 3.33 (Casing Volumes)Approx. Purge Rate: 2.5 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Pump Start: 0938; Purge Start: 0941; clear and odorless;
**RECHARGE BEHAVIOR:** ☒ Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank TrailerPurge water disposal: Combination**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<u>Original</u>	<u>Duplicate</u>	<u>Blank</u>	<u>Other ( Trip / Source / )</u>
Sample ID: <u>MW-15</u>	Sample ID: <u>Dupe-2-4-Q03</u>	Type: _____	Type: _____
Sample Time: <u>1003</u>	Sample Time: <u>1007</u>	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: <u>5</u>	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**

## GROUNDWATER COLLECTION AND SAMPLE LOG

WELL ID # MW-16Project Name: Quarterly Monitoring at JPL, Pasadena, CA.Project No: 04-4428.10Navy Contract No.: N68711-01-D-6008, D.O. No. 0001Sampled By: Dale Erbes and J. RobinsonDate: 11/10/03Weather: Cool and Clear

22632 Golden Springs Dr., Suite 270

Diamond Bar, CA 91765

Telephone: (909) 396-7662

Fax: (909) 396-1455

**PURGE VOLUME CALCULATION (casing volume):**

$$\left( \frac{285}{\text{TD (feet)}} - \frac{237}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{94}{\text{Calculated Purge Volume}} \text{ Gallons}$$

**PURGE METHOD****PUMP INTAKE SETTING**Bailer – Type: \_\_\_\_\_ **X** Pump – Type: 2" Grundfos

Depth in feet (BTOC): \_\_\_\_\_

**FIELD PARAMETER MEASUREMENT**

Time	Depth to Water (Feet)	Total Discharge (Gallons)	pH	Conductivity (mS/cm)	Turbidity (NTU)	Dissolved Oxygen (mg/L)	Temp (° C)	ORP (mV)	Comments
0651	237	0.0	5.51	62.5	3.9	8.39	15.84	273	
0708		22.5	5.79	0.2	0.00	7.06	18.48	267	
0723		45.0	5.95	47.4	0.00	6.83	18.90	250	
0738		67.5	6.14	47.1	0.00	7.02	18.87	247	
0753		90.0	6.32	47.3	0.30	7.29	17.48	244	
0801	237	101.25	6.41	47.6	0.00	8.76	18.96	243	

Total Purge Volume: 101.25 (Gallons)Total Discharge: 3.23 (Casing Volumes)Approx. Purge Rate: 1.5 (GPM)**OBSERVATIONS DURING PUMPING****NOTES:** (well condition, color, clarity, odor): Pump Start: 0647; Purge Start: 0649; clear and odorless;
**RECHARGE BEHAVIOR:** **X** Fast recharging  
 Slow recharging (80% recharge did not occur after two hours)
**WATER DISPOSAL**Purge water storage: Polytank TrailerPurge water disposal: Combination**WELL SAMPLING**

Sample Depth in feet (BTOC): \_\_\_\_\_

<b><u>Original</u></b>	<b><u>MS / MSD</u></b>	<b><u>Additional Sampling</u></b>	<b><u>Additional Sampling</u></b>
Sample ID: <u>MW-16</u>	Sample ID: _____	Type: _____	Type: _____
Sample Time: <u>0804</u>	Sample Time: _____	Sample ID: _____	Sample ID: _____
No. of Containers: <u>5</u>	No. of Containers: _____	Sample Time: _____	Sample Time: _____
		No. of Containers: _____	No. of Containers: _____

**ORIGINAL FIELD RECORD**



Total Volume:



Contract #: N68711-01-D-6008  
Delivery Order #: 0001

Well ID: MW-#23  
Sampling Zone No.: 5-1  
Depth (ft) 542, 445, 319, 254, 174.2  
Beginning of Session: 14.13  
End of Session: 14.13

Start Time: 0645  
Finish Time: 0904

Date: 10.23.03  
Page: 1041

Water Pressure Inside Casing: —

[illegible]

**Notes:**

5': Clean + odorless, 4': Clean + odorless, 3': Clean + odorless,  
2': " " , 1': " "

Total Volume:





Water Pressure Inside Casing: —

[illegible]

**Notes:**

5: Clean + odorous, 4: Clean + odorous, 3: Clean + odorous, 2: Clean + odorous

1. 11 11

Take second run for 5, due to wrong sample bottle collection q. - 10.24.03

Total Volume:





Contract #: N68711-01-D-6008  
Delivery Order #: 0001

Well ID: MW-24  
Sampling Zone No.: 5-2 Start Time: 0723  
Depth (ft): 178A, 554, 435, 373+279 Finish Time: 1099  
Beginning of Session: 14.06  
End of Session: 14.06

Date: 10.28.03  
Page: 101

Water Pressure Inside Casing: —

[illegible]

**Notes:**

5: Clear + Address, 4: Clear + Address, 3: Clear + Address, 2: Clear + Address  
1: " "

Total Volume:





Contract #: N68711-01-D-6008  
Delivery Order #: 0001

Well ID: MW-19  
Sampling Zone No.: 5-1 Start Time: 1048  
Depth (ft): 498 ft, 444, 392, 314, 242 Finish Time: 1320  
Beginning of Session: 17.04  
End of Session: 17.08

Date: 10.29.03  
Page: 1 of 1

Water Pressure Inside Casing: —

[illegible]

**Notes:**

Notes:  
5: Clear + odorless, 4: Clear + odorless, 3: Clear + odorless, 2: <sup>light</sup> ~~clear~~ brownish, yellow + odorless, 1: yellowish brown + odorless

Total Volume:



# Groundwater Sampling Multi-Port Well Field Data Sheet

10

JPL Pasadena

Contract #: N68711-01-D-6008

Delivery Order #: 0001

Well ID: MW-21

Sampling Zone No.: 5-1

Depth (ft): 372, 310, 240, 161 + 90 ft

Beginning of Session: 14.09

End of Session: 14.08

Start Time: 0753

Finish Time: 1023

Date: 10-30-03

Page: 1 of 1

Water Pressure Inside Casing:     

Port #	Run #	Surface Function Checks							Position Sampler		Sample Collection Checks								Water Quality Parameters				
		Shoe Out	Vacuum Check Valve Closed	Valve Open	Evacuate Container	Valve Closed	Shoe in	Arm In	Deactivate Set Arm Locate Port		Arm out	Pressure in MP	Shoe Out	Zone Pressure	Open Valve	Zone Pressure	Close Valve	Shoe In	Pressure in MP	Time	PH	Turb. (NTU)	Temp. (oC)
5	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	129.61	✓	150.39	✓	150.38	✓	✓	129.61	0810	6.10	3.0	18.32	85.1
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	103.23	✓	123.55	✓	123.54	✓	✓	102.72	0835	6.29	0.25	17.70	76.2
4	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	102.72	✓	123.55	✓	123.55	✓	✓	102.63	0859	6.70	1.0	18.51	75.3
3	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	72.53	✓	93.66	✓	93.66	✓	✓	72.47	0919	7.11	1.4	19.14	0.090
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	38.01	✓	59.47	✓	59.48	✓	✓	38.09	0940	7.33	1.3	18.44	0.103
2	2	✓	✓	✓	✓	✓	✓	✓	✓	✓	14.11	✓	28.28	✓	28.26	✓	✓	14.18	1004	7.33	6.8	21.48	93.7









Contract #: N68711-01-D-6008  
Delivery Order #: 0001

Well ID: MW-3  
Sampling Zone No.: 2 + 1  
Depth (ft): 252 + 172  
Beginning of Session: 14.17  
End of Session: 14.20

Start Time: 0707  
Finish Time: 0818

Date: 11.5.03  
Page: 2062

Water Pressure Inside Casing: —

2  
1  
MS/MSD  
3

**Notes:**

2: clear + odorless, 1: cloudy + odorous

Total Volume: \_\_\_\_\_